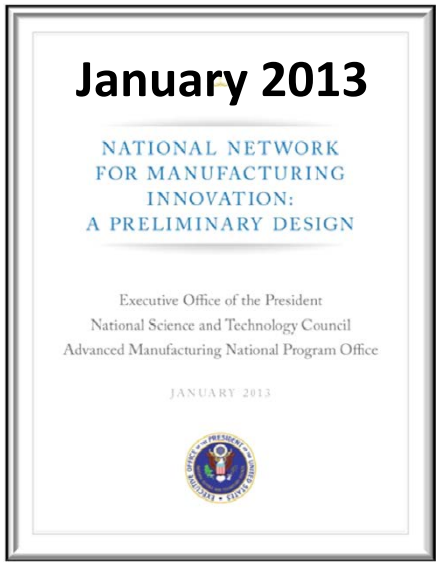
National Network for Manufacturing Innovation (NNMI) - Overview

The Administration's Continuing Focus on Advanced Manufacturing

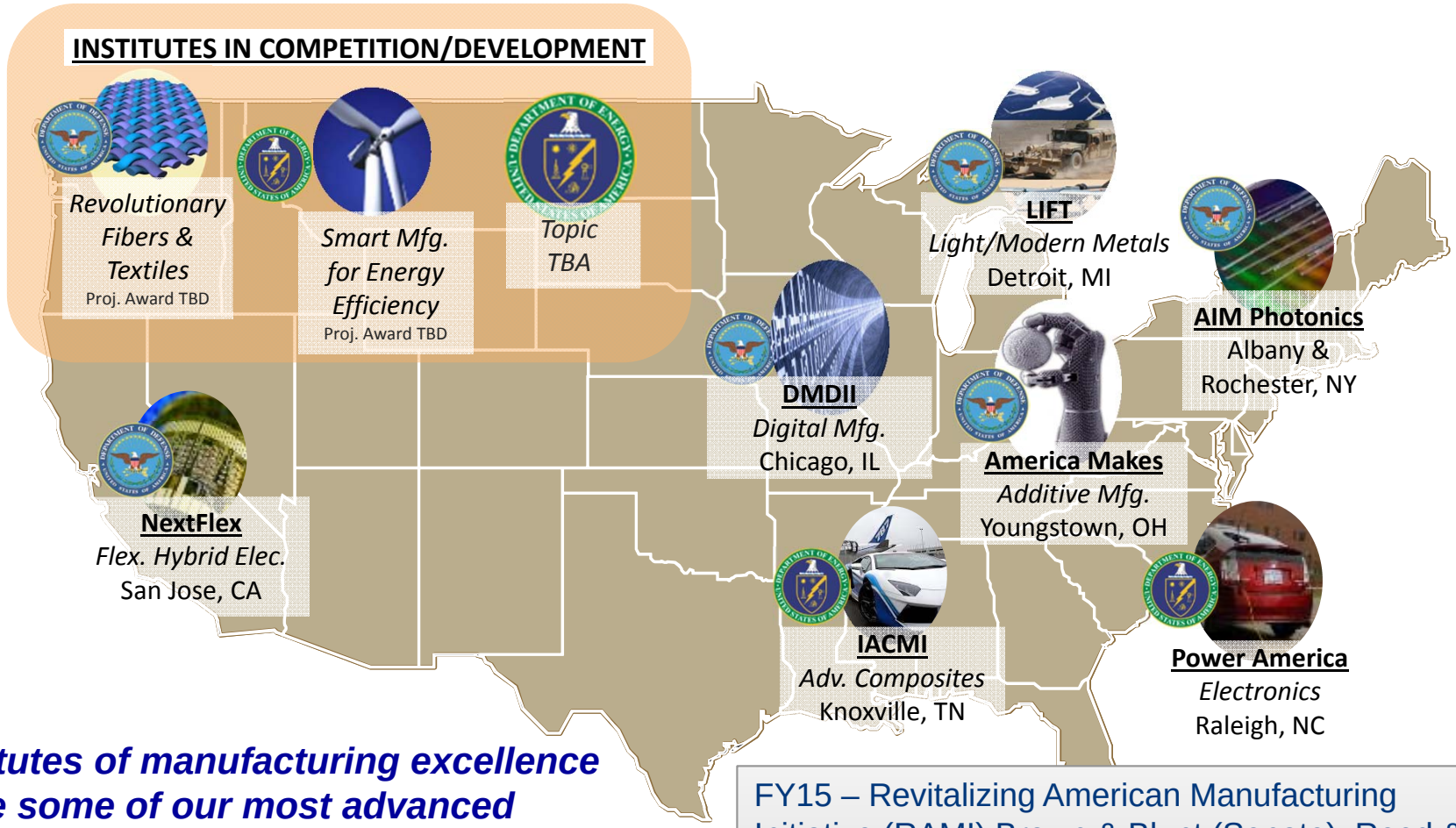


January 2013

Jan 2014

Feb 2014

Building the National Network for Manufacturing Innovation (NNMI)



"institutes of manufacturing excellence where some of our most advanced engineering schools and our most innovative manufacturers collaborate on new ideas, new technology, new methods, new processes." President Obama, March 2012

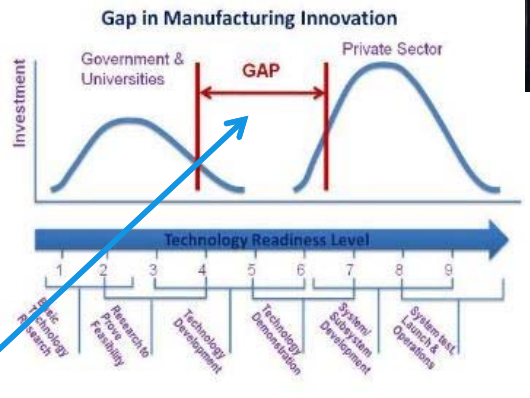
FY15 – Revitalizing American Manufacturing Initiative (RAMI) Brown & Blunt (Senate), Reed & Kennedy (House)
Authorized Department of Commerce, NIST, Advanced Manufacturing Program Office as conveners of the NNMI

National Network for Manufacturing Innovation (NNMI)

"institutes of manufacturing excellence where some of our most advanced engineering schools and our most innovative manufacturers collaborate on new ideas, new technology, new methods, new processes."

- Vision for up to 45 institutes of manufacturing innovation
- **FY15 – Revitalizing American Manufacturing Initiative (RAMI) (Department of Commerce), Brown & Blunt (Senate), Reed & Kennedy (House)**
- Close the gap between R&D and deployment of technological innovations in domestic production of goods

President Obama at Rolls-Royce Crosspointe Petersburg, VA – March 9, 2012



www.manufacturing.gov

"*We Can't Wait*" – use existing resources and authorities to demonstrate concept through a pilot institute – select competitively – fit within agencies missions

America Makes – The National Additive Manufacturing Innovation Institute

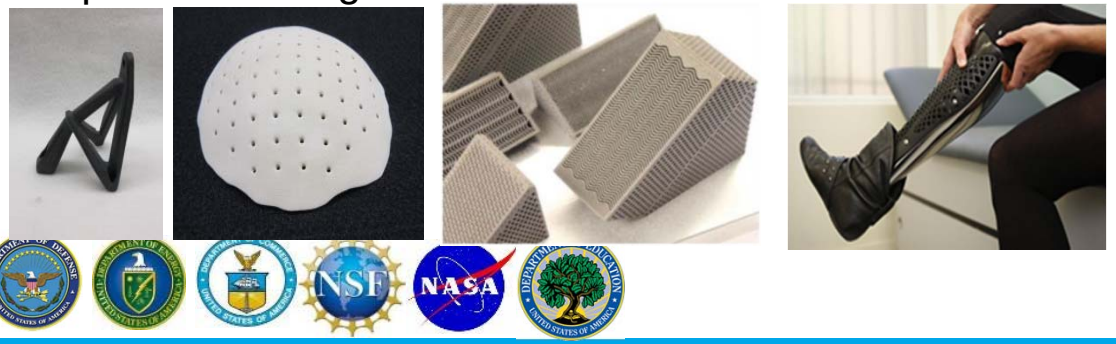
Est. August 2012; Hub location: Youngstown, OH

Lead: National Center for Defense Manufacturing and Machining (NCDMM)

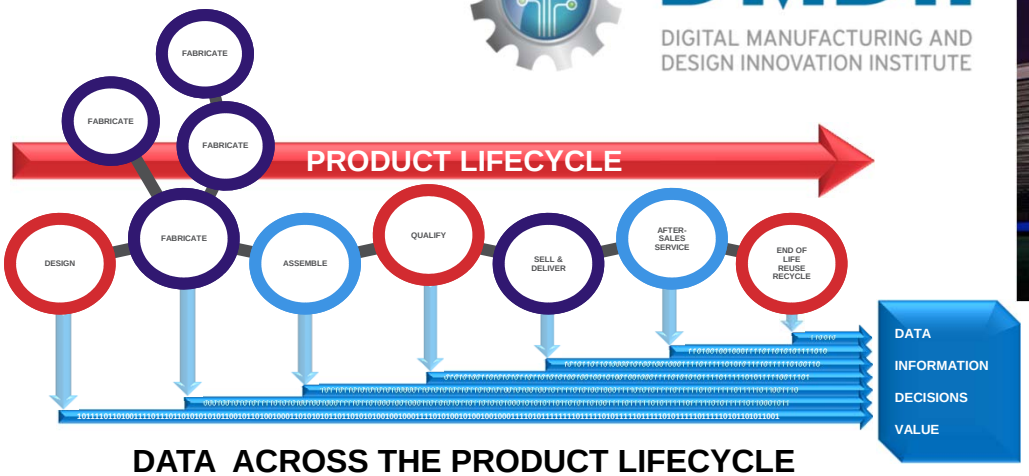
Regional location: "TechBelt" Cleveland to Pittsburgh Corridor

Vision: Accelerate additive manufacturing innovation and widespread adoption by bridging the gap between basic research and technology development/deployment.

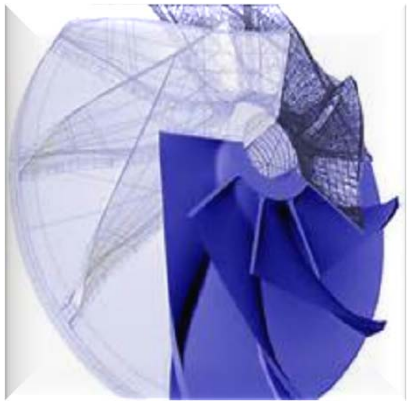
- Headquartered in Youngstown, OH with a satellite center at the University of Texas, El Paso
- Consortium of >169 member organizations
- Technology Portfolio: X projects, $XM combined public and private funding



Digital Manufacturing and Design Innovation Institute (DMDII)



DATA ACROSS THE PRODUCT LIFECYCLE



Est.: February 2014

Lead: UI LABS

Hub location: Chicago, IL

Federal Funding: $70M
Cost Share (UILabs): $248M

Mission: Digitize American Manufacturing

Over 3:1 Industry Cost Share

Government POC: Dr. Greg Harris, gregory.a.harris81.civ@mail.mil
Institute POC: Dr. Dean Bartles, dbartles@uilabs.org
Website: http://dmdii.uilabs.org/

LIFT: *Lightweight Innovations for Tomorrow* (Lightweight and Modern Metals Manufacturing)

Est. February 2014

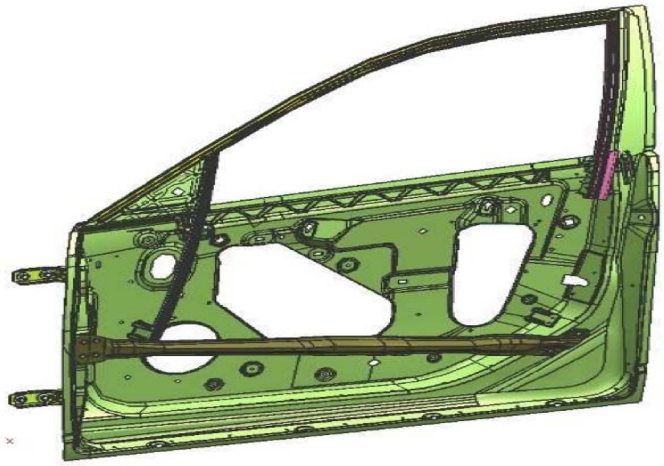
Lead: ALMMII (American Lightweight Materials Manuf. Innovation Institute)

Hub location: Detroit Metro, Michigan

Regional location: I-75 Corridor

Current number of members: 78

Federal Funding: $70M



Government POC: Johnnie Delaoch, johnnie.deloach@navy.mil
Institute POC: Larry Brown, lbrown@almmii.org
Website: http://lift.technology/

Mission: Provide the National focus on expanding US competitiveness and innovation, and facilitating the transition of these capabilities and new technologies to the industrial base for full-scale application.

Positioned to expand the US Industrial base for new products and technologies for commercial and USG demands that utilize new, lightweight high-performing metals

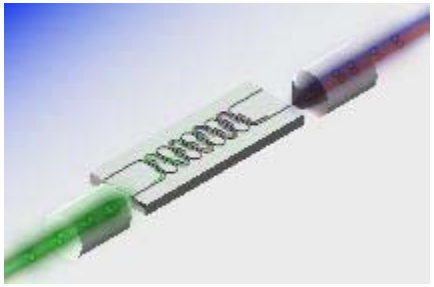
American Institute for Manufacturing Integrated Photonics ("AIM Photonics")

Est. July 2015

Lead: RF SUNY

Hub location: Albany and Rochester, NY

Federal Funding: $110 M



Objective

Develop and demonstrate innovative manufacturing technologies for:

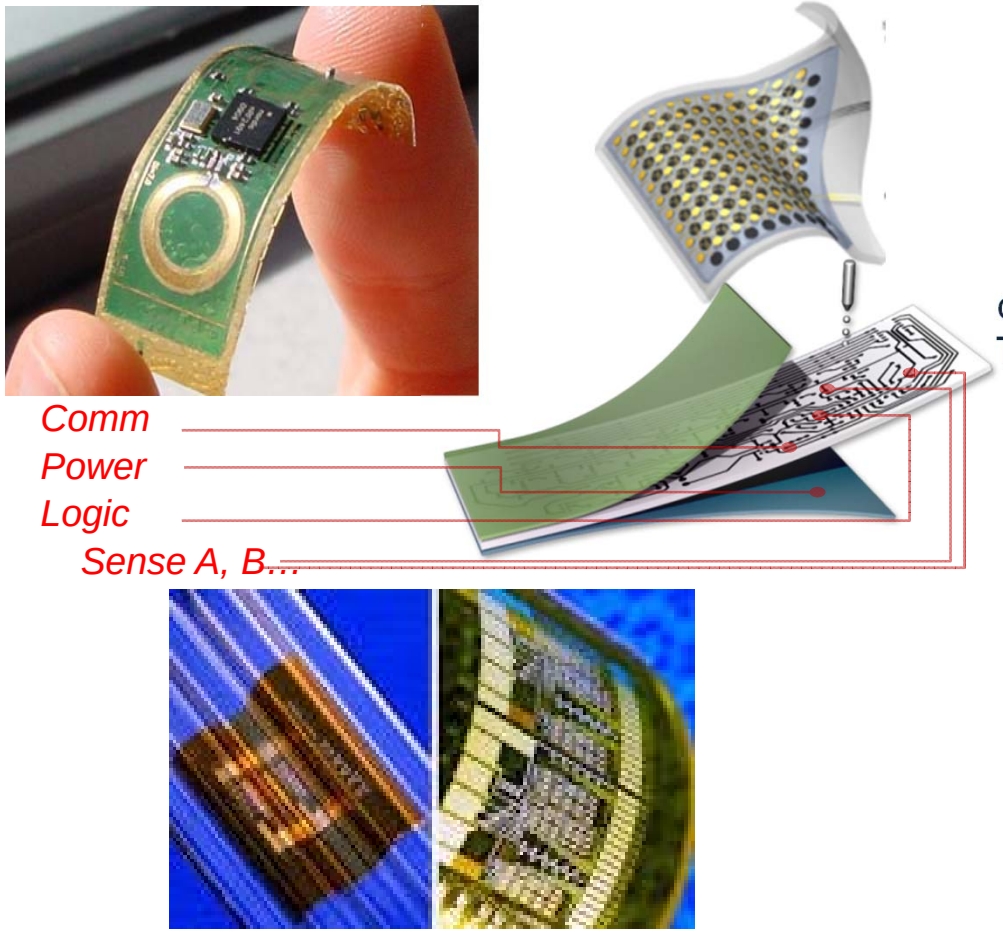
- **Ultra high-speed transmission of signals for the internet and telecommunications**
- **New high-performance information-processing systems and computing**
- **Sensors and imaging enabling dramatic medical advances in diagnostics, treatment, and gene sequencing**

This Institute will focus on developing an end-to-end photonics 'ecosystem' in the U.S., including domestic foundry access, integrated design tools, automated packaging, assembly and test, and workforce development.

All these developments will require cross-cutting disciplines of design, manufacturing, packaging, reliability and testing.

Government POCs: Neil Supola, Neil.d.supola.civ@mail.mil,
Nick Usechak, nicholas.usechak@us.af.mil
Institute POC: Michael Liehr, mliehr@sunypoly.edu
Website: http://www.aimphotonics.com/

NextFlex – Flexible Hybrid Electronics Manufacturing Innovation Institute



Est. August 2015

Lead: FlexTech Alliance

Hub location: San Jose, CA

Federal Funding: $75 M

Flexible Hybrid Electronics: Highly tailorable devices on flexible, stretchable substrates that combine thinned CMOS components with components that are added via "printing" processes. This technology is identified as flexible-hybrid due to integration of flexible components such as circuits, communications, sensors, and power with more sophisticated Silicon based processors.

Commercial	DOD Applications
Wearable Technologies	Warfighter information devices and sensors
Internet of Things	Unattended sensors, vehicle borne sensors
Medical prosthetics, medical sensing	Warfighter Training and performance monitoring. Soldier medical care

Government POCs: Dr. Eric Forsythe, eric.w.forsythe.civ@mail.mil, Ben Leever, ben.leever@us.af.mil
Institute POC: Dr. Malcolm Thompson, malcolm.thompson@flextech.org
Website: http://manufacturing.gov/fhe-mii.html

Revolutionary Fibers and Textiles Manufacturing Innovation Institute

$75M federal investment over five years

Currently in Source Selection

Revolutionary Fibers and Textiles

Advances in fiber science have created fibers with extraordinary properties of strength, flame resistance, and electrical conductivity. These 'revolutionary' fibers are composed of specialty fabrics, industrial fabrics, e-textiles, and advanced textiles. They are built upon a foundation of synthetic and/or multi-material fibers that have a wide-range of applications in both the defense and commercial sector that go beyond traditional wearable fabrics

Objective:

- Serve as a public-private partnership between government, academia and industry to address manufacturing challenges from design to end products
- Support an end-to-end innovation 'ecosystem' in the U.S. for revolutionary fibers and textiles manufacturing and leverage domestic manufacturing facilities to develop and scale-up manufacturing processes
- Provide rapid product realization opportunities, based on robust design and simulation tools, pilot production facilities, a collaborative infrastructure with suppliers, and workforce development opportunities through targeted training and curriculum programs

Government POC: Steve Luckowski,
stephen.l.luckowski.civ@mail.mil
Website: http://manufacturing.gov/rft-mii.html

Transportation – Covers and Airbags *Geosynthetics – Construction*






Military and Commercial Shelters



Military and Commercial Smart Clothing